

**REDESCRIPTION AND HOSTS OF *MELANORHOPALA INFUSCATA*
PARSHLEY, WITH NOTES AND NEW DISTRIBUTION RECORDS FOR *M.*
FROESCHNERI HENRY AND WHEELER (HEMIPTERA:
HETEROPTERA: TINGIDAE)**

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Abstract. Some of the least-known North American lace bugs are those that feed mostly on stems of their host plants, such as species of the genus *Melanorhopala* Stål, rather than on host leaves, as do most other tingids. We cite new state records for the rarely collected *M. froeschneri* Henry and Wheeler and *M. infuscata* Parshley and report saucer magnolia (*Magnolia × soulangiana*) as the first plant on which nymphs of *M. infuscata* have been found. Diagnoses and habitus photographs are provided for the adult of both tingid species, and *M. infuscata* is redescribed.

Key Words: Hemiptera, Heteroptera, Tingidae, *Melanorhopala*, new records, host plants, *Campsis radicans*, *Magnolia*

Most lace bugs, such as members of the large genus *Corythucha* Stål, feed on lower leaf surfaces of their host plants and produce chlorosis on the upper surfaces. Species of *Melanorhopala*, however, generally feed on the stems of their hosts. Because of their atypical feeding habits, which result in their hosts remaining asymptomatic, *Melanorhopala* species tend to be rare in collections and their bionomics little known. Henry and Wheeler (1986) reviewed the genus, described the new species *M. froeschneri*, and provided a key to the four species of this Nearctic genus.

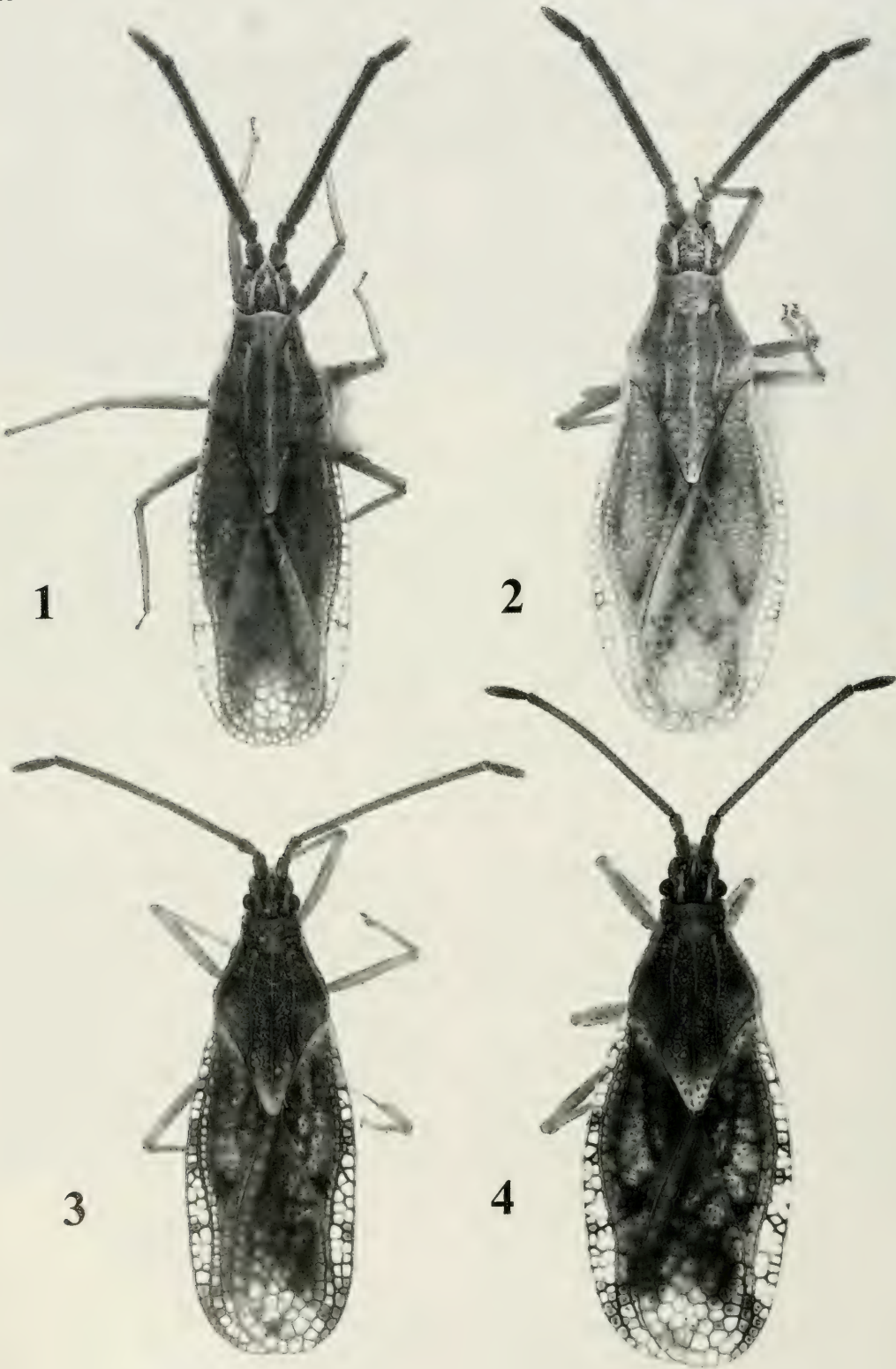
Herein, we add nine states to the known distribution of *M. froeschneri* Henry and Wheeler, a lace bug restricted to trumpet creeper (*Campsis radicans* (L.) Seem.; Bignoniaceae). Kentucky and

South Carolina are added to the distribution of the rarely collected *M. infuscata* Parshley. We record an ornamental magnolia (Magnoliaceae) as the first plant on which nymphs of *M. infuscata* have been observed. Diagnoses and habitus photographs of both lace bug species are provided, and *M. infuscata* is redescribed.

All specimens are deposited in the National Museum of Natural History, Washington, D. C., unless indicated otherwise.

Melanorhopala froeschneri
Henry and Wheeler
(Figs. 1, 2, 5)

Melanorhopala froeschneri Henry and Wheeler 1986: 236 (orig. descrip., host, 5th instar); Froeschner 1988: 728 (cat.).



Diagnosis.—*Melanorhopala froeschneri* (Figs. 1, 2) is similar to *M. infuscata* (Figs. 3, 4) in having an overall slender antennal segment III that lacks the clavate apex of *M. clavata*. From *M. infuscata*, it is distinguished by the overall yellowish-brown coloration; shorter (<1.70 mm), basally thicker (diameter subequal to segment II) antennal segment III; and the proportionately wider lateral height of an eye.

Host.—*Melanorhopala froeschneri* apparently is restricted to trumpet creeper, *Campsis radicans*. We have found nymphs and adults only on green, mostly second-year stems of this woody vine that were attached to the trunks of coniferous and deciduous hardwood trees, suggesting that the growth stage of trumpet creeper and suitable humidity and other micro-environmental factors are necessary for successful colonization by this cryptic tingid (Henry and Wheeler 1986; see also specimens examined below).

Distribution (Fig. 5).—No additional records of *M. froeschneri* have been published since its original description from Delaware, Kentucky, Maryland, North Carolina, and Tennessee (Henry and Wheeler 1986). New state records are Alabama, Arkansas, Georgia, Illinois, Indiana, Mississippi, Missouri, South Carolina, and Virginia.

Specimens examined.—ALABAMA: 8 ♂, 5 ♀, Tuscaloosa Co., Tuscaloosa, University of Alabama, 7 June 1987, T. J. Henry & A. G. Wheeler, Jr., taken on *Campsis radicans*; 2 ♂, 1 ♀, Lee Co., Davis Arboretum, Auburn University, Auburn, 30 June 2001, A.G. Wheeler, Jr., ex *Campsis radicans*. ARKANSAS: 3 ♂, 1 ♀, Johnson Co., Clarkville, 13 June 1987, T. J. Henry & A. G. Wheeler,

Jr., taken on *Campsis radicans*. GEORGIA: 1 ♀, Wilkes Co., Tignall, 29 July 2001, A. G. Wheeler, Jr., ex *Campsis radicans*. ILLINOIS: 1 ♂, 1 ♀, 1 fifth instar, Johnson Co., Rt. 37, 4 mi. S of Goreville, 8 June 1991, A. G. Wheeler, Jr., taken on *Campsis radicans*. INDIANA: 1 ♂, 2 ♀, Gibson Co., nr. Gibson Lake and Skelton, 8 June 1991, A. G. Wheeler, Jr., taken on *Campsis radicans*. MISSISSIPPI: 7 ♂, 2 ♀, Washington Co., Greenville, Rt. 82, 8 June 1987, T. J. Henry & A. G. Wheeler, Jr., taken on *Campsis radicans*; 3 late instars, DeSoto Co., Olive Branch, 4 July 1999, A. G. Wheeler, Jr., ex *Campsis radicans*. MISSOURI: 1 ♀, Mississippi Co., Rt. 62, 0.5 mi. NE of Wilson City, 9 June 1991, A. G. Wheeler, Jr., taken on *Campsis radicans*. SOUTH CAROLINA: 1 ♀, Oconee Co., S 37–68, 0.1 km W jct. Rt. 127, SW of Westminster, 10 June 2001, A. G. Wheeler, Jr., ex stems of *Campsis radicans*; 2 ♂, 7 ♀, Oconee Co., jct. rts. 76 & 123, Westminster, 4 July 2001, A. G. Wheeler, Jr., ex *Campsis radicans*. VIRGINIA: 1 ♀, Essex Co., 1 mi. SE Dunnsville, 37°52'N, 76°48'W, 27 July 1993, T. J. Henry, taken on *Campsis radicans*.

Melanorhopala infuscata Parshley
(Figs. 3–5)

Melanorhopala infuscata Parshley 1917: 19 (orig. descrip.), 1920: 274 (note, host); McAtee 1923: 145 (distr., host); Drake and Ruhoff 1965: 298 (cat.); Horn et al. 1979: 14 (note, host); McPherson and Weber 1981: 138 (list); Henry and Wheeler 1986 (note, distr.); Froeschner 1988: 728 (cat.).

Diagnosis.—*Melanorhopala infuscata* (Figs. 3, 4) is most similar to *M.*

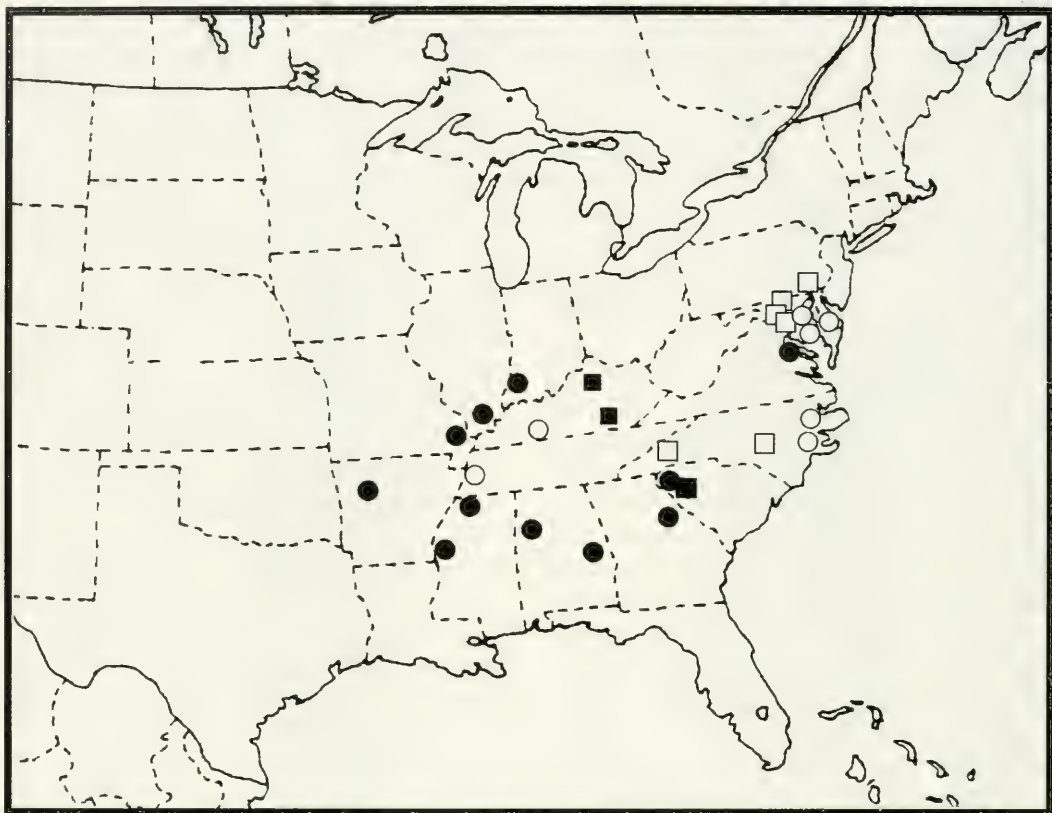


Fig. 5. Distribution of *Melanorhopala* spp. Open circles = previous records of *M. froeschneri*. Closed circles = new records of *M. froeschneri*. Open squares = previous records of *M. infuscata*. Closed squares = new records of *M. infuscata*.

froeschneri (Figs. 1, 2) based on the overall slender antennal segment III, unlike the strongly clavate segments of *M. clavata*. This species can be distinguished from *M. froeschneri* by the longer (>1.70 mm), uniformly slender (diameter less than segment II) antennal segment III, the dark, mottled dorsum, and relatively narrow lateral height of the eyes.

Description.—*Coloration:* Yellowish brown to darker brown, strongly accented and mottled with dark brown to fuscous, especially on head, antenna, discal area and carinae on pronotum, abdomen, mesosternum, and on many cells of hemelytra.

Structure: Head spines moderately developed; occipital spines extending past eyes but usually not reaching bases of frontal spines; median spine usually extending to apices of frontal spines; frontal spines extending to basal one third of antennal segment I. Rostrum extending beyond metacoxae to posterior margin of second visible abdominal segment. Antennal segment I slightly longer than II; segment III longest, length slightly longer than length of pronotum in male, slightly less than pronotal length in female, evenly slender, diameter slightly less than diameter of segment II; segment IV fusiform. Hemelytra macropterous

(brachypterous forms unknown), lateral margins subparallel, only slightly convex; costal area with two rows of closed cells, with an irregular third row on distal third before narrowing to one row; subcostal area with two rows of closed cells.

Measurements: Male ($n = 10$): Length 4.80–5.10 mm, width 1.80–1.85 mm. **Head:** Width 0.64–0.66 mm, vertex 0.38–0.39 mm; buccula length 0.70 mm. **Rostrum:** Length 2.13–2.15 mm, extending to 2nd visible abdominal segment. **Antenna:** Segment I, 0.25–0.30 mm; II, 0.20–0.23 mm; III, 2.08–2.20 mm; IV, 0.50 mm. **Pronotum:** Length 1.94–1.98 mm; basal width 1.25–1.28 mm.

Female ($n = 10$): Length 5.10–5.40 mm, width 2.00–2.08 mm. **Head:** Width 0.65–0.70 mm, vertex 0.39–0.44 mm, buccula 0.78–0.80 mm. **Rostrum:** Length 2.20–2.35 mm. **Antenna:** Segment I, 0.25–0.26 mm; II, 0.20–0.22 mm; III, 1.75–1.98 mm; IV, 0.45–0.50 mm. **Pronotum:** Length 0.78–0.80 mm, basal width 1.25–1.35 mm.

Host.—Host relationships of *M. infusca* have remained enigmatic until recently when nymphs first were found. Adults have been taken on bark and at sap of tulip tree (*Liriodendron tulipifera* L.; Magnoliaceae) (Parshley 1917, 1920), on flowers of New Jersey tea (*Ceanothus americanus* L.; Rhamnaceae) (McAtee 1923), and on a peach tree (*Prunus persica* (L.) Batsch; Rosaceae) (Horn et al. 1979). We have collected single adults on magnolicaceous plants: bull bay or southern magnolia (*Magnolia grandiflora* L.) at Suffolk, Virginia, and star magnolia (*M. stellata* (Sieb. & Zucc.) Maxim.) in Whitley County, Kentucky. We collected nymphs, nymphal exuviae, and adults from twigs of saucer magnolia (*M. × soulangiana* Soul.) in Franklin County, Kentucky.

In addition, we discovered a female taken on *Liriodendron tulipifera* at Rock-

ville, Maryland, by G. Steyskal on July 18, 1965. This specimen had been misidentified by C. J. Drake as *Teleonemia cylindricornis* Champion.

Parshley (1920) suggested that *M. infusca* might live on the bark of *L. tulipifera*, a magnoliaceous tree, and subsist on sap from the trunk rather than from the leaves. Our collections of adults on three species of *Magnolia* support an association with the Magnoliaceae. The beating of nymphs from twigs of saucer magnolia and apparent feeding on twigs in rearing containers is evidence of bark rather than leaf feeding by this lace bug. Because nymphs have been taken only on saucer magnolia, a hybrid between two Chinese species (Everett 1981), native hosts of *M. infusca* still are unknown. Tulip tree and bull bay are possible native hosts, as is sweet bay, *M. virginiana* L., which is known from Plummers Island, Maryland (Shetler et al. 2006), where the tingid has been collected on tulip tree (Parshley 1920).

Distribution (Fig. 5).—Following its description from Falls Church, Virginia (Parshley 1917), *M. infusca* soon was recorded from additional localities in Virginia; Glen Echo, Maryland; and Washington D.C. (Parshley 1920, McAtee 1923). Since the 1920s, only two adults of this lace bug have been reported: one from an unspecified locality in North Carolina (Horn et al. 1979) and another from McDowell County, about 64 km east of Asheville (McPherson and Weber 1981). The specimen listed from North Carolina by Horn et al. (1979), in the North Carolina State University Collection, was taken at McCuller, Wake County (R. L. Blinn, personal communication). We have discovered one other specimen, a female taken at Rockville, Maryland. New state records are Kentucky and South Carolina.

Specimens examined.—DISTRICT OF COLUMBIA: 1 ♀, “7-5-20,” E. D. Ball. KENTUCKY: 29 ♂, 19 ♀, Franklin Co., Frankfort Cemetery, Frankfort, 38°11'48"N, 84°52'02"W, 23 June 2001, T. J. Henry and A. G. Wheeler, Jr., on *Magnolia × soulangiana* Soul.-Bod.; 6 ♂, 5 ♀, Franklin Co., Frankfort Cemetery, Frankfort, 7 July 2001, A. G. Wheeler, Jr., on *Magnolia × soulangiana* Soul.-Bod.; 1 ♀, Franklin Co., Frankfort Cemetery, Frankfort, 25 Aug. 2003, A. G. Wheeler, Jr., on *M. × soulangiana*; 1 ♂, Whitley Co., jct. Main & Depot streets, Williamsburg, 6 July 2001, A. G. Wheeler, Jr., ex *Magnolia stellata*. MARYLAND: 3 ♀, Montgomery Co., near Plummer's Island, 5–25 July 1914, at tulip pop[lar] sap, R. C. Shannon; 1 ♀, Montgomery Co., Rockville, 18 July 1965, George Steyskal, on *Liriodendron tulipifera*. PENNSYLVANIA: 1 ♂, Philadelphia Co., Philadelphia, VIII-7-1927, J. C. Lutz colln.; 2 ♀, “Pa.” SOUTH CAROLINA: 1 ♂, Pickens Co., Clemson, 2 July 1984, S. W. Hamilton (Clemson University Arthropod Collection, Clemson, SC). VIRGINIA: 1 ♂, 4 ♀, Fairfax Co., Falls Church, 2 Aug., N. Banks colln.; 1 ♀, Fairfax Co., Great Falls, from tulip tree; 1 ♀, Suffolk Co., Suffolk, 15 June 1985, A. G. Wheeler, Jr., on *Magnolia grandiflora*.

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